Lactuca serriola L. (Asteraceae)
Prickly Lettuce

Description. Biennial, sometimes persisting longer than 2 years, 5-20 dm tall, from a stout taproot. Stems 1 to several, erect, branches ascending, sharply hispid or prickly below, glabrous above. Leaves alternate, lower ones 5-20 cm long, oblong to oblanceolate, deeply pinnately lobed, sagitatte, the lower lobes directed downward, prickly hispid, upper ones 2-15 cm long, clasping, ascending, somewhat glabrous or hispid along the lower margins. Heads in terminal panicles, ligulate (all flowers bilateral, corolla flat, 5-lobed), 8-12(16) mm long, cylindrical to conical, stalked. Phyllaries in 3-4 unequal series, oblong to lanceolate, glabrous, the outer much shorter than the inner. Flowers 10-20, corollas yellow. Achenes 3-3.5 mm long, ellipsoid to fusiform, ribbed, the beaks 3.5-4 mm long, the pappus soft-capillary, falling separately. (Barkley 1986, Clapham et al. 1962, Ferakova 1976, Ferris 1960, Gleason and Cronquist 1991, Stebbins 1993, Munz 1959).

Synonyms: The later name, *L. scariola* L. has been widely used for this species.

Note: A related species, *L. saligna* L. (willow lettuce), differs by having a narrow, spike-like inflorescence, subsessile heads, linear to lanceolate leaves with entire to lobed margins, but with the lobes restricted to near the base, and heads with 8-12 flowers. The closest relative *of L. serriola* appears to be *L. sativa*, the cultivated lettuce (de Vries 1996, 1997, Haqui and Godward 1984, Hill et al. 1996, Kesseli et al. 1991). Other species, including *L. saligna*, do not appear to be closely related and are completely cross-incompatible with either *L. sativa* and *L. serriola* (de Vries 1990, Kesseli et al. 1991). *Lactuca serriola* also shows a wide range of ecotypic variation, at least in Great Britain (Carter and Prince 1985, Prince and Carter 1985, Prince et al. 1985). At least 3 different races are reported from the North America (Barkley 1986, Gleason and Cronquist 1991).

Geographic distribution. *Lactuca serriola* is generally believed native to Europe, western Asia, and northern Africa (Clapham et al. 1962, Ferakova 1976, Munz 1959). It has become naturalized widely in North America, Australia, New Zealand, southern Africa, and South America (Arnold and De Wet 1993, Barkley 1986, Chapman 1991, Fernald 1950, Gleason and Cronquist 1991, Webb et al. 1988).

Lactuca serriola (as *L. scariola*) was first reported in the early 1890s from near Berkeley (Brandegee 1891) and northern California (Brandegee 1893). By the early 1900s, it had become more widely established throughout California (Robbins 1940). *Lactuca serriola* is known on all four northern Channel Islands (Junak et al. 1997) and it is reported from most counties in California (Anonymous 1998, Stebbins 1993).

Reproductive and vegetative biology. *Lactuca serriola* is self-compatible and experiences a high level of self-pollination (Stebbins 1958). Pollination in the related species, *L. sativa*, is effected primarily by small bees or hover flies (Syrphidae), at least in Britain (Watts 1958). Like other Asteraceae with a capillary pappus and small light seeds, *Lactuca serriola* has a relatively high level of dispersability (Anderson 1992, Sheldon and Burrows 1973). Dormancy in seeds of *L. serriola* is broken by a combination of light and moisture (Ellis et al 1989). Germination rates and dormancy also may be affected by

maturation date on long-lived plants and by patterns of variation in daily temperature (Gutterman 1992, 1994).

Ecological distribution. In both natural and naturalized geographic ranges, *Lactuca serriola* occurs on disturbed sites of waste areas, roadsides, open sites in grasslands, and abandoned fields (Amor 1986, Ferakova 1976, Gleason and Cronquist 1991, Munz 1959, Robbins et al. 1970, Webb et al. 1988).

Weed status. *Lactuca serriola* is not considered a serious noxious weed in agricultural or horticultural practice, at least at a global level (not listed by Holm et al. 1977), nor is it considered a noxious weed by the State Dept. of Food and Agriculture (Anonymous 1996). However, it is listed for the United States by Lorenzi and Jeffery (1987).

Microbial pathogens. Several viral, bacterial, and fungal pathogens have been reported from both *L. serriola* and *L. sativa*, including yellows virus, turnip mosaic potyvirus, *Microdochium*, *Rhizomonas* (corky root disease), *Bremia* (downy mildew), and *Erysiphe* (Galea and Price 1988, Lebeda 1984, 1986, 1989, 1994, McCreight 1987, O'Brien and Van Bruggen 1991, Van Bruggen et al. 1990). Natural variation in resistance to *Rhizomonas* and *Bremia* was reported by Bonnier et al. (1994), Brown and Michelmore (1988), Farrara et al. (1987), Maisonneuve (1994), Michelmore (1991), and Witsenboer et al. (1995) and to yellows virus (McCreight 1987). The primary purpose of these studies was to characterize genes conferring resistance, so that they could be used eventually in developing disease-resistant strains of cultivated lettuce.

Insect pathogens. White flies **(***Bemisia* spp.) and noctuid moth larvae (*Trichoplusia ni*) are the only insects reported as causing damage to leaves of *Lactuca serriola* and *L. sativa* (Coudriet et al. 1986, Dussourd 1997, Summers et al. (1996) also showed that most whitefly larvae remained on the same plant on which they hatched.

Herbicide control. Lorenzi and Jeffery (1987) recommended the use of 2,4-D in waste places and along roadsides where other vegetation was desirable and the use of paraquat, bormacil, and sulfometuron for non-selective control. Resistance to several sulfonylurea herbicides (imidazolinone, imazapyr, imazaquin, imazethapyr) was reported by Mallory-Smith et al. (1990a, b) and Guttieri et al. (1992). Several references were found that report herbicide (primarily sulfonylurea) resistance, and its genetic basis, in wild strains of *Lactuca serriola* (e.g., Alcocer-Ruthling et al. 1992 a,b,c, Guttieri et al. 1992, Mallory-Smith et al. 1990a,b, 1993) The purpose of these studies was to search for genes conferring resistance, so that they could be used in developing herbicide-resistant strains of cultivated lettuce.

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